DOCUMENT RESUME

ED 362 849 CS 011 443

AUTHOR Davidson, Judith; Bruce, Bertram C.
TITLE Inquiring about Inquiry. Technical Report No. 588.
INSTITUTION Center for the Study of Reading, Urbana, IL.
PUB DATE Oct 93
NOTE 17p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Educational Research; Elementary Secondary Education; Higher Education; *Inquiry; *Interdisciplinary Approach; *Preservice Teacher Education; Qualitative Research; Thinking Skills
IDENTIFIERS Reflective Inquiry; University of Illinois; Writing Thinking Relationship

ABSTRACT

Teacher educators are faced with the challenge of restructuring teacher education to prepare teachers to meet the educational demands of a world in which diverse technologies require learners to work flexibly across numerous disciplinary boundaries. To meet these demands, teachers-in-training will need to become comfortable with inquiry approaches, i.e., instructional methods that connect ideas across broad subject domains and emphasize experiential and child-centered outlooks. This report describes a qualitative study that followed the experiences of 30 preservice teachers enrolled in an alternative teacher education program designed to develop teachers' skill and understanding in inquiry approaches. For a six-month period, instructors and students in the Year-Long Project (YLP) at the University of Illinois Inquiry Block engaged with one another in a complex dialogue about inquiry. Through class and individual discussions, assignments, and observations, final exams, videotaped lessons, and guest presenters, they sent, received, edited, translated, and published numerous messages about inquiry. For example, as part of their work for the "language and literacy block," each of the YLP students handed in a daily journal about the events in his or her life as a teacher. The report describes the process in which the teachers engaged, what was found to be effective in learning about this approach, and the implications of this learning for teacher educators, researchers, and policy makers. (Contains 20 references.) (Author/RS)

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Center for the Study of Reading

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UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
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College of Education
University of Illinois at Urbana-Champaign
174 Children's Research Center
51 Gerty Drive
Champaign, Illinois 61820

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Abstract

Teacher educators today are faced with the challenge of restructuring teacher education to prepare teachers to meet the educational demands of a world in which diverse technologies require learners to work flexibly across numerous disciplinary boundaries. To meet these demands, teachers-in-training will need to become comfortable with inquiry approaches, instructional methods that connect ideas across broad subject domains and emphasize experiential and child-centered outlooks. This report describes a qualitative study that followed the experiences of 30 preservice teachers enrolled in an alternative teacher education program designed to develop teachers' skill and understanding in inquiry approaches. The report describes the process in which the teachers engaged, what was found to be effective in learning about this approach, and the implications of this learning for teacher educators, researchers, and policy makers.

INQUIRING ABOUT INQUIRY

In many colleges of education, teacher educators urge their students to use experiential and child-centered methods for learning that go under the name of "inquiry approaches." For most preservice teachers, however, inquiry approaches represent a new form of discourse that differs greatly from the traditional, recitative, unidisciplinary methods they experienced in their own schooling. The purpose of the qualitative study described in this report was to follow the experiences of 30 preservice teachers as they grappled with ideas about inquiry approaches.

The preservice teachers we studied, almost all in their last year of an undergraduate degree program, were enrolled in a program called the Year-Long Project (YLP) at the University of Illinois. In this program, the students were immersed in a set of experiences--in elementary classrooms and in college classrooms--that were designed to prepare them for teaching in a competitive, information-driven, pluralistic world in which discipline boundaries are permeable and fluid. Each student in the YLP had three 8-week placements in elementary school classrooms, where they spent 3 days a week working with children and classroom teachers. On the remaining days of the week, they attended "block" classes--one for language and literacy (reading, children's literature, and language arts); one for curriculum and instruction; and one for inquiry (mathematics, science, computer technology, and social studies). For the last 10 weeks of the year, they undertook full-time student teaching placements.

For this report, we are concerned with one aspect of the YLP students' experiences: the development of their theories about inquiry. Inquiry, as we will use it, refers to a complex of philosophical concepts about the nature of knowledge and the nature of educational processes that will best nurture the developing mind. Rooted in the ideas of John Dewey (1900/1990, 1902/1990, 1933), watered with the rains of Piaget (Gruber & Voneche, 1977), Vygotsky (1962, 1978), and a range of constructivist thinkers, and blooming among various progressive school movements and reform efforts, the inquiry perspective is distinguished by its emphasis on learning processes, the empowerment of the learner, and, most important, the primacy of meaning. Rather than focusing on the philosophical underpinnings of inquiry, we believe that it will be more helpful to think about what inquiry means when translated into daily classroom practice.

Picture a seed pod exploding in a slow-motion nature film--fluff and seeds scattering in ever-widening circles away from the center. This is our image of curriculum development in a classroom committed to an inquiry approach to teaching and learning. From one set of questions, students move farther and farther afield as they pursue their investigations. Children and teachers work together as researchers, listening carefully to each other's ideas. As they proceed, they learn about the tools they need for inquiry. Sometimes those tools are new vocabulary and concepts, at other times they are knowledge of grammar and proofreading, and at still others, the ability to use computer software to construct models. Some tasks send students into the community to interview residents or to the library to find books about the topics they are investigating (Atwell, 1990; Cohen, 1972; Doris, 1990; Duckworth, Easley, Hawkins, & Henriques, 1990; Easley & Easley, 1992; Gamberg, Kwak, Huchings, Altheim, & Edwards, 1988; Hansen, Newkirk, & Graves, 1985; National Science Foundation, 1988; Paley, 1981; Rogers, Roberts, & Weinland, 1988; Whitaker, 1986). This is a challenging kind of learning for both student and teacher. It is a kind of teaching for which few teachers have been adequately prepared.

For a 6-month period, instructors and students in the YLP's Inquiry Block engaged with one another in a complex dialogue about inquiry. Through class and individual discussions, assignments and observations, final exams, videotaped lessons, and guest presenters, they sent, received, edited, translated, and published numerous messages about inquiry. At many points, the students challenged each other, and at other times, they converged and amplified each other. In each instance or transaction, the question "what is inquiry?" deepened in substance and scope. Throughout this process, the theoretical and practical understandings of both instructors and students were intricately linked in a complex form

something like the familiar, twisting double helix of DNA. The discussions that ranged through the Inquiry Block were not mere academic wrangling. Ideas about inquiry touch upon teachers' personal perceptions of the purpose of teaching, and they intersect with many critical social currents of thought.

In the following section, we describe our documentation process and the rationale behind it. In the next section, we describe who the YLP students are, who we are, and how the course was structured. This provides us with a base from which to explore the processes students followed as they tried to make sense of inquiry approaches, and, subsequently, the significant findings and recommendations that grew from our examination of those processes.

Documenting Inquiry

This study focuses on the ideas about inquiry that were presented and debated in the Inquiry Block class. We did not choose to follow students in their classroom placements (or in the other Block classes), although we did follow their classroom work second-hand through their written assignments, videotapes, self-reports, and other artifacts.

We made 15 formal observations out of a possible total of 20 3-1/2-hour class sessions, beginning September 5, 1991 and concluding February 24, 1992. We also gathered observations from five of the nine 3-hour video discussion sessions. The notes from these sessions were then analyzed and coded, and emergent categories were developed (Bogdan & Biklen, 1992; Lincoln & Guba, 1985; Sanjek, 1990).

Besides the observations, analysis of student assignments also provided important data for the study. The first assignment YLP students received was a survey probing their beliefs and experiences in the areas of mathematics, science, social studies, and technology. Other assignments included a case study, lesson and unit development, as well as smaller assignments such as an observation and a set of math problems. The final assignment amounted to a cross between a follow-up survey on students' attitudes about inquiry and exit interviews. Students wrote at some length about their ideas of inquiry, how they developed, what had influenced this development, and how they planned to use ideas about inquiry in their future work.

We selected the work of 7 students to study in greater detail. These 7 appeared to us to represent the spectrum of student perspectives toward inquiry. We analyzed their assignments carefully, screening them for outlook on inquiry and features related to the development of these ideas. This analysis, conducted prior to analysis of the observation notes, helped to alert us to the categories of analysis that we should consider in reviewing the observation notes. It also raised a number of issues that might otherwise have remained obscure. For instance, it made us aware of the very strong influence, whether positive or negative, the cooperating teacher and that teacher's classroom had on students and on the shaping of their ideas about inquiry.

Throughout the program, as part of their work for the Language and Literacy Block and the Curriculum and Instruction Block, each of the YLP students handed in a daily journal about the events in their lives as teachers. These journals are intimate documents, records of conversations between the student and the instructors. They detail the students' successes and upsets and their excitement and irritation, as they worked to become classroom teachers. We asked the 7 students we had selected for our case-study research if they would be willing to share their journals with us. Four were willing to do so. We appreciate the risk they took in doing so. The journals are indeed rich sources of information.

We conducted interviews with all members of the instructional team. Student final exams were constructed to serve as exit interviews, and we also conducted in-depth interviews with 2 of the case-study students. Unfortunately, because of the intense pressure students felt during the last month of their program as they were trying to complete state requirements for their teaching certificate, we were

unable to conduct further interviews with them. The final, however, by its structure, provided information very similar to what we would have asked in an interview.

Throughout the project, using a series of 23 process memos, we questioned, hypothesized, considered, and reconsidered our ideas from every angle. These memos, ranging from 1-page outlines to articles over 10 pages in length, cover such topics as: What is inquiry? What do the survey data say about students' belief on knowledge domains? What transformations have YLP students undergone during the year? It is through these successive reiterations that one can see this study emerging.

The YLP, its activities, and staff interactions, as reported here, are a matter of public record; for that reason, we have not attempted to disguise the name of the project, its location, or the names of the instructional team. But, for these same reasons, we elected not to identify the YLP students by name.

The Inquiry Block

The YLP Students

During a presentation on multicultural issues, the 30 YLP students were asked by the guest speaker to raise their hands to indicate their origins. From their responses, we found that about 1/3 came from Chicago, 1/3 from the Chicago suburbs, and 1/3 from other Illinois communities. A number of those in the "other" category came from small rural communities with 2,000 to 4,000 inhabitants. All but 4 were in their early 20s. Of the 4 older students, 2 were male and 2 had children. In fact, there were only 2 men in the entire group. There were no African-American or Hispanic group members, and 3 Asian-American women. One woman mentioned that one of her grandmothers had been part Native American, but she wasn't sure from which tribe.

In an initial survey, we asked students questions about their beliefs about math, science, and social studies, what their experiences with these subjects had been, as learners and/or teachers, and what their concerns or desires had been in these areas. We learned that the majority were extremely anxious about teaching math, somewhat concerned about teaching science, but rather at ease about their ability to cope with social studies. Surprisingly, the amount of previous experience they had had teaching these subjects was in inverse proportion to their anxiety. A number of students had experience teaching or observing math or science lessons, but none could remember any teaching experience related to social studies. When asked about their beliefs, a majority of the group talked about the importance of learning basic math skills, tying their beliefs to math's relevance in daily life activities such as writing checks, figuring out discounts, or buying food. They considered science important because of its critical relationship to understanding who we are and how the world functions. Many also stated that it was critical to know the scientific process. A number of students stated they weren't sure what social studies really was, and many described it simply as a collection of disciplines.

In a different kind of survey conducted on the first day of class, YLP students were asked to introduce themselves and tell the group one thing they would want the group to know about themselves. Students mentioned a range of personal interests, desires, and concerns which, for them, were as equally compelling as their beliefs about various school subjects, if not moreso, in their understanding of who they would be as teachers. These included:

> I have a brother who is three years old.
>
> I would like to write children's books.
>
> I like camping--I went on a camping/canoeing trip with my family this summer.

I have 5 older brothers and sisters between the ages of 30-40.
I am not a mistake.

I am a Christian, and when I'm not studying the Bible, I live with a family from my church with four boys. I decided to go into education after I lived with them.

I love kids, and I like to watch cartoons.

The Inquiry Block Instructional Team

The purpose of the instructional team was to combine university research strengths with school-based teaching strengths. There were 6 official members of the Inquiry Block Instructional Team, 4 from the university and 2 from the public schools: Bertram Bruce, a professor and the team leader; Jack Easley, a professor with special expertise in science and math inquiry (both in their first year of the project); Ellen Baranowski, a teaching assistant and former teacher with several years of elementary experience; Judith Davidson, a research assistant; Barbara Gillespie, a first-grade teacher; and Patti Stoffel, a third/fourth-grade teacher. Both Gillespie and Stoffel were exemplary teachers, well known in the district for their innovative practice, and both had been with the YLP since its inception 3 years earlier.

Multiple Points of Entry

The Inquiry Team structured the curriculum in keeping with its beliefs: that knowledge is unified, any subject can serve as a topic for study or a tool for further investigation, any point within a subject can serve as a departure for inquiry, and the curriculum plan should flow organically from the interests and needs of the learner. This philosophy translated into a syllabus that was open-ended, with room to build as the class progressed. It was also behind the decision not to divide the class time into a set of hours or weeks for math, science, and social studies but instead to approach topics and time as unified, and not to focus on teaching hierarchical sequences of skills or methods, but rather to demonstrate through immersion the ways that curriculum flows organically for the activities. Inquiry team members, believing that children and adults are active learners, also structured activities toward active participation rather than passive listening. Because they believed that each individual must construct his or her own definition of inquiry, they opted not to lecture on the subject, and instead chose to provide students with multiple opportunities to explore, experience, discuss, and think about the subject.

The schedule of weekly events reflects this outlook. On one day students might participate in a hands-on workshop on statistics and probability or measurement, hear a guest speaker (historical inquiry, writing in math, and multicultural education were some of the topics speakers addressed), and discuss a reading assignment. On another day they might move from small group to small group, learning about different ways to use math manipulatives, much as young children would move in a classroom designed around learning centers. Regardless of the activity or topic, staff stressed interdisciplinary thinking with an emphasis on observing and learning from children. Homework assignments, such as a case study or the development of lesson plans, provided opportunities to integrate this thinking. Each student was also videotaped in the classroom three times during the course, and these videotapes were presented and discussed during special video sessions.

A special and unique way for YLP students to engage in inquiry-based learning was the Kit Project. The elementary school where the Inquiry Team met had received a special science literacy award from the State of Illinois that included funds to develop integrated classroom science kits. The YLP students were teamed with classroom teachers to help teachers develop kits on 11 selected science topics. The grant also provided students with funds to buy their own materials to create kits to take with them on their first teaching assignment. The kits created by the students included electricity and magnetism,

weather, the universe, colors, life cycles, how things work, animal habitats, air, water, the human body, structures, oceanography, and dinosaurs.

Understanding Inquiry

For the majority of students in the Inquiry Block, inquiry was more than simply a new idea: Its principles contrasted sharply with the ways they had been taught, the ways they imagined themselves acting as teachers, and the previous training they had received for this role. Throughout the course, they would struggle to position this cluster of concepts within professional and personal spheres of meaning. Two students spoke eloquently to this dilemma:

> On my first day of inquiry class, I did not know what to expect from this class. I had no feelings good or bad toward inquiry. As the semester proceeded, I became very frustrated with the concept of inquiry. Sixteen years of my schooling consisted of a very structured, teacher-directed education. I was conditioned to this kind of learning. Now all of a sudden this structured learning environment was removed and I was now asked to explore my own learning (inquire about my own understandings, concepts, and ideas). I immediately grew very frustrated. I needed more structure. I did not know what was expected of me. I felt lost and confused. (Joan)

> When I first heard about the inquiry block, I thought to myself "How can they bring together science, math, and social studies into one big block?" I had no clue of how those three subjects could be related to each other. I didn't know too much about integration at that time. When you had us complete those surveys to assist you in learning how much we knew about science, social studies, and math, I was hesitant to hand it in. I realized I did not know much about *what* science, social studies, and math meant to me. I did not have enough knowledge to articulate this information in writing. The survey also showed me uncertainties towards my abilities in being able to teach those subjects. Basically, I did not know how to go about teaching without a textbook. I did not want to rely on the textbook as a crutch. (Gretchen)

Ideas about inquiry affected the YLP students, not on just one but on many levels, causing them to give consideration to concerns about what classroom practice should look like, as well as who teachers are and what role they play in instruction. Few students mentioned encountering these kinds of ideas or methods about teaching in other places. Of those who did, the encounters had been limited and episodic--an exciting curriculum unit in the sixth grade, sandwiched between years of rote textbook and drill learning; the opportunity to teach in a nature center during the summer; or camp counseling work that drew upon inquiry-like ideas. Only two or three had met such approaches in their university classes. One of the students mentioned observing in a whole-language classroom a few years before participating in the YLP. For the YLP students, then, encountering inquiry could perhaps be compared to the experiences of an indigenous people who suddenly find themselves being governed by a colonial power with vastly different philosophical and ideological beliefs. As benevolent as that power might be, it still wields power (grades) and manages to confront them in many ways with the "differentness" of its thought, concerns, and goals.

In the kinds of questions they asked about inquiry, students reflected the conflicts they felt between what they believed and had experienced, what they learned in the Inquiry Block, and the competing demands of the other Blocks, their classroom cooperating teacher, parents, and the administration of the school. These questions included the following:

> Is inquiry "manipulatives"?

Is inquiry another name for *multiple strategies* and *experiential activities*?

How does inquiry work in math, science, and social studies?

Is it appropriate to discuss math as a social issue?

Shouldn't the teacher always have the right answer?

How do you get kids to talk about math?

What if the district opposes inquiry teaching?

How can you be sure this will work for all students?

Isn't inquiry an approach you use after you've established the basics?

What's wrong with the traditional ways?

Isn't there a set of basic concepts and methods that we have to know first?

Throughout the course, the discussion about inquiry never abated. And although the various issues associated with it were never resolved, there were many moments when students reached new understandings. For a large number of students, one incident in particular--the visit of guest speaker James Anderson--represented a special moment in the process of building understanding. Anderson, a historian and a faculty member at the University of Illinois, conducted a hands-on workshop on how to examine history textbooks for bias. The impetus for the workshop grew out of the debate about Columbus that was at the time of great interest in the schools, as Columbus Day and the Columbus 500th anniversary activities converged. Anderson talked about history as inquiry, then the students practiced critical inquiry in the textbooks, and from this arose a vibrant and stimulating discussion that crossed many fields, in which students discussed history, analyzed forms of discourse, considered the social implications of texts and teaching, and examined their own experiences and beliefs. The following is one student's recounting of that memorable day:

> Yes, there was such an incident. It was the class during which Jim Anderson came to speak to our class about the weakness and bias in social studies textbooks. He took something that seems so set, so definite--history--and showed how we are not getting the whole truth about it from textbooks. But how is history usually taught to children? Through the use of textbooks, of course.
>
> Jim Anderson, someone who seemed very intelligent and educated and who was *not* involved as an inquiry instructor, presented to our class that day how to inquire about history, basically. He got me thinking about what history really is and how I can find out. He modeled exactly what I want to do as an inquiry teacher. That really validated for me the whole concept of inquiry. This "stranger" was repeating the same ideas I'd already heard in class, but for some reason, this time they were striking me, this time they were sticking. I was really involved and my mind was going a thousand directions. I want to do this kind of inquiry with my own students. (Eleanor)

Findings and Implications

In examining the data, we were able to identify a number of significant findings about the process student teachers experienced in coming to understand the inquiry approach and interdisciplinary ways of thinking about curriculum.

1. **The continuum of beliefs**. Inquiry was not a single, monolithic concept among YLP students. Each one constructed his or her own meanings. Definitions of inquiry can be placed on a continuum--as a method at one end and as a philosophy on the other--and in between are any manner of combinations of the two. The kinds of definitions that students developed represent both personal and social forces at work. Personal forces come in the form of past and present experience but also indicate the attitude or disposition individuals bring to making sense of the world. It was apparent that some students prefer to try to understand things from a global perspective, but for others, this is anathema. Instead, they want to build their picture piece by piece, working from direct classroom experience.

2. **Ideas about inquiry are closely intertwined with beliefs about specific disciplines**. Ideas about inquiry were not stable across disciplines. As we learned in the very beginning of the program, students held strong beliefs about the meaning and purposes of the different disciplines and about their ability to think and succeed in these subject areas. Students' belief systems about the disciplinary areas, already well-developed when they entered the YLP, had definite implications for the ways they would approach interdisciplinary work. The students tended to see the different disciplinary areas of the Inquiry Block as discrete elements. The linkages they drew between the disciplinary areas most often reflected known curriculum usage, that is, how schools connect these ideas, rather than meaningful personal, social, or scientific questions confronting the discipline.

3. **Which comes first: The basics or the inquiry**? The question of the basics versus inquiry is a multidimensional one. YLP students expressed concerns about teaching the basics to children, about learning methods for teaching the basics, and about learning the basics of content information for themselves. Each of these three levels of "the basics" is predicated on one common assumption, and that is the notion that in each field there is an essential body of knowledge arranged in sequence, and that one must start at the bottom and work one's way up through this pyramid of information. In contrast, thinkers within an inquiry perspective tend to portray the acquisition of knowledge as a spiralling process that works back and forth between conceptions of part and whole, a process in which one is continually refining one's vision of both. This discrepancy in outlooks created a dilemma for students.

The question of the basics is also closely tied to students' beliefs about themselves and the different disciplines incorporated in the Inquiry Block. Particularly in math, many felt inadequate to the math questions that inquiry might raise. "I don't understand fractions." "I can't do decimals." "I've had so little geometry." "I was a failure in math." Incapacitated by their own lack of skills, they felt unable to direct children to explore these ideas. Much of the anxiety may have been due to their fear that they would lose control because they would not know the answers, or that they would be focused on the math answers at the expense of the development of the children's thinking.

4. **A consideration of community**. YLP students were members of multiple discourse communities, and each of these communities made demands upon them for allegiance and time. Each of these communities was also a stakeholder in different views about inquiry. YLP students not only juggled, integrated, and rejected the different values and needs of these communities, they were also active in theorizing about community and its meaning to them as individuals and educational practitioners. Thus, their relationship to community--both specifically and generally--is critical in a consideration of their ideas about inquiry. This community was both a liberal and a conservative force in promoting the

understanding of inquiry, in some cases spurring students on to take new risks; in other cases, mitigating against exploration or reflection.

5. **The cooperating teacher: an unexplored factor.** Placed in a total of 3 classrooms in 12 elementary schools across 2 districts with differing educational philosophies, YLP students experienced a variety of styles and beliefs among their cooperating teachers. The ways that the cooperating teacher supported each student personally, professionally, and in their exploration of ideas about inquiry varied immensely from situation to situation. The enthusiasm, direction, and support that some cooperating teachers offered some of the YLP students provided inestimable boosts in self-esteem and efficacy, particularly in relationship to examining the most challenging aspects of inquiry approaches. On the other hand, some cooperating teachers outlawed inquiry methods from their classroom from the beginning, and students teaching in these rooms were unable to explore these ideas without finding themselves in conflict with their classroom placement. In some of these classrooms, science and social studies curricula faced the same fate of inquiry. Like many teacher training programs, cooperating teachers were selected for their willingness to participate rather than for their expertise in inquiry methods or the breadth of the curricula they offered students. Nor did the YLP program make any attempt to groom cooperating teachers in these areas.

6. **The political implications.** There are profound political implications inherent in the inquiry approach and the beliefs about knowledge that undergird it. The organization and schedule of the elementary school day would change dramatically if these implications were realized. Teachers would question the ironclad time slots, the curriculum mandates, the paucity of textual materials, and the lack of interorganizational flexibility. Coming to grips with ideas about inquiry is not a mere theoretical stance; for YLP students it meant an examination of their political values and a consideration of the ways that their explorations might affect their future job security. Inquiry meant serious risks for some of the YLP students, dependent as they were upon the recommendations of supervisors and classroom teachers, many of whom were not well-versed in this outlook.

Therefore, it was not surprising that, in discussing their future teaching plans, students expressed a desire to implement inquiry in their classrooms, but almost all stressed the cautionary way they would go about doing so. These ran the gamut from "I'll start with the textbook and branch out," to "I'll need to understand my principal's expectations and get a sense of what the other teachers are doing." Learning to manage a classroom is a higher priority for most of these beginning teachers than teaching from an inquiry approach. They assume that once control issues are addressed, they will then be able to think about thinking.

Implications

What we have learned through this study leads us to a number of recommendations for others with a vital concern in the ways we train teachers to use inquiry approaches in their classrooms. To make inquiry theory and inquiry teaching viable in preservice education programs, we believe we must

1. provide teachers-in-training with personal role models or images of inquiry teachers, understanding that this is a process that starts when formal education begins;

2. assist preservice teachers in gaining a better understanding of what professionals in different disciplines really do--how they work, create knowledge, and collaborate with colleagues;

3. provide student teachers with multiple opportunities to undertake meaningful inquiry (particularly interdisciplinary inquiry);

4. demonstrate to student teachers that learning can be a spiraling process, not just a linear ascent; and

5. provide supportive circumstances in schools where student teachers are placed.

In addition to these recommendations for change in the preservice curriculum, we also found a number of areas where further research is needed. These include, among others:

1. how preservice teachers come to know and take account of children in their planning for inquiry lessons;

2. the role of the cooperating teacher and student teacher placement in relationship to inquiry learning;

3. teachers' theories of disciplinary and interdisciplinary knowledge and the relationship of their ideas to curriculum and instruction;

4. the implications of gender and power roles to developing ideas about inquiry among educators; and

5. the political implications of instructional beliefs and the consequences to preservice education dedicated to an inquiry position.

We predicate these recommendations for action and research on the assumption that colleges of education will, as some are doing, consider the ways that they are inquiring institutions and how their instruction, curriculum, standards, and requirements reflect their beliefs and assumptions in this area. It is very hard to learn to be an inquiring teacher when the institution that is training you says, "Do as I say, not as I do." The YLP was an attempt to bring institutions, theoretical beliefs, and classroom practice into closer, meaningful alliance. We need many more such examples and opportunities to learn from the trial and error that accompanies these new adventures.

Conclusion

Today's teachers must prepare students for a future that requires individuals to demonstrate flexibility, analytic thinking, and high-level problem-solving skills. The traditional curriculum, with its emphasis on rote instructional practices and its sharp divisions among disciplinary subjects, has proven to be ineffective in preparing young people to meet these challenges. Inquiry approaches, which provide a viable alternative to traditional methods, will only prove effective if we can develop a teaching force with the necessary expertise to employ this outlook. The critical importance of continuing efforts to explore how this end may be achieved are conveyed by these words from Gail, a YLP student.

> I've seen so many different styles of things. I think that I can do both, and I can enjoy doing both, but which is the best for the kids. It's really hard sometimes. I think I'm just questioning things a lot. What should I do? How should I do it? I guess I always knew there was no one right way to teach, but I thought there would be more black and white, not all these grays, you know. I just feel there's so much to think about.... I'm seeing myself not only as a teacher but also as a constant learner. I get to continue to be a student for the rest of my life, not only a teacher, but a student to learn more. That's probably the biggest thing to see myself as, not only a teacher, but also a learner myself...forever...basically. (Gail)

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Author Note

The authors thank Alan Peskin for his review and suggestions.